

Translating Wastewater Data for Policymaking

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Overview of presentation



Impact of standardization on wastewater trends and alerts



Triangulating information through data synthesis



Impact of standardization on wastewater trends and alerts



Research was conducted in partnership with the Tuckaseigee Water & Sewer Authority, Jackson County Department of Public Health, and University of Wisconsin-Milwaukee's School of Freshwater Sciences and supported by a grant from Dogwood Health Trust.









Influence of different parameters on trends

Haywood county

(A) Unstandardized viral concentration



(B) Standardization by flow rate, service population, & viral recovery (BCov)







Influence of different parameters on trends

Jackson county

(A) Unstandardized viral concentration





(B) Standardization by flow rate, service population, & viral recovery (BCov)

(C) Standardization by a human biomarker (PMMoV)





What criteria should trigger an alert?



Should alerts be based on:



- Levels crossing a threshold? Based on absolute levels or percent change?
 - Sustained increase for X days? How many days? Ignore large spikes?
 - Statistically significant increase? What type I error rate is appropriate?
 - **Regression modeling of trends?** *Ability to handle non-linear effects?*

Contextualizing wastewater data for policymakers





Utah DEQ wastewater dashboard





Mathematica wastewater dashboard





Regional context

Community vulnerability

Population risk factors

Curated COVID-19 repository https://www.mathematica.org/features/covid-19-curated-data-modeling-and-policy-resources



Vaccination **Racial Disparities Case Counts and Testing Rates** Surveillance Tools **Diagnostic Testing Methods and Coding** Contact Tracing

Provider Capacity and Patient Needs Identifying At-Risk Populations Secondary Impacts **Forecasting Tools Policy Actions and Preventing Spread of the Virus Other Resources**

Tableau COVID-19 Data Hu Massachusetts General Hospital

Descartes Labs

Vaccination

These sites provide detailed data, information, and resources related to vaccine development, vaccination rates, and vaccine acceptance.

US COVID Risk and Vaccine Tracker

SOURCE: Covid Act Now

Go to resource

provides state and county-level data on COVID-19 cases, deaths, and hospitalizations, as well as test positivity, ICU occupancy and vaccination rates. Testing and ICU occupancy data come from the U.S. Department of Health and Human Services. The tracker aggregates these measures into an overall time-varying COVID risk indicator and a static measure of community vulnerability. The tracker offers email alerts for regions of interest as well as a weekly roundup of new research on COVID-19.

Covid Act Now (which joined forces with the Covid Exit Strategy

and includes partners from Georgetown, Stanford, and Harvard)



	Data source 🖨	Title	¢ Coverage ¢	Aggregation \$
	All	All		
1	Mathematica	196Me: COVID-19 Risk Score Calculator	n/a	n'a
2	AHSQ	2016/2018 Compendium of U.S. Health Systems	U.S.	Health System
3	U.S. Centus Rumau	American Community Survey (ACS)	U.S.	State, County
4	GeoAcatritica	ArcGIS Pro Proximity Tracing Tool		
5	Association of State and Territorial Health Officials (ASTHO)	ASTHO's e-Learning Center		
6	ICP38	Best Practices for Measuring the Social, Behavioral, and Economic Impact of Epidemics	e/a	nà
7	Centers for Disease Control and Prevention (CDC)	CDC International Classification of Diseases, Tenth Revision, Clinical Modification (ICD- SD-CM)	U.S.	n/a
8	U.S. Department of Health and Human Services	Centers for Medicare and Medicaid Services (CMS)-Dual Enrolment	U.S.	State, County
9	NYU Langona Health	City Health Dashboard	U.S.	City
10	S266	CoEpi: Community Epidemiology in Action		
11	Centers for Disease Control and Prevention	Contact Tracing—Get and Keep America Open: Supporting states, tribes, localities, and territories		
12	Lawfare	Contact Tracing Apps in the United States	n/a	n/a
13	PreventExidentics	Contact Tracing Staffing Calculator	na	n/a
14	Etzhugh Mullan Institute for Health Workforce Equity, The George Washington University	Contact Tracing Workforce Estimator	U.S.	County
15	505	Corona Data Soraper	Global	Country, State, County

Showing 1 to 15 of 142 entries



Triangulating information through data synthesis

Montana



Research was partly supported by the National Institute of General Medical Sciences of the National Institutes of Health under Award Number U54GM115371.

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National Institute of General Medical Sciences

Site Drug Use Profiles





Estimating Black Market Activity

Methamphetamines





Predicting Need for Overdose Response



Mathematica

Measuring Law Enforcement Impact





Some publications on our wastewater work

Call to action around the opioid epidemic

<text><text><text><text><text>

Taking lessons from the opioid epidemic for COVID-19

ROUTE FIFTY

Want to Test More People for Covid-19? Look At the Sewage



By Aparna Keshaviah, Sc.M. and Miranda Margetts, Ph.D.

Developing a flexible national surveillance system

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-=	Wastewater viral load New deaths	 New cases Policy/community changes 		- Waste - Policy/	water viral load · /community changes	COVIDcast combin

Developing a Flexible National Wastewater Surveillance System for COVID-19 and Beyond

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VOL. 129, NO. 4, 20 APRIL 2021



Acknowledgements



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Marisa Henry Data Analytics Developer









National Institute of Standards and Technology U.S. Department of Commerce





